Utah Department of Health

Clinical Laboratories and VRSA/VISA
Vancomycin Resistant *Staphylococcus aureus*
Vancomycin Intermediate *Staphylococcus aureus*

Summary: Identification of VRSA or VISA in your laboratory should institute a "panic value" response. Vancomycin resistance is extremely rare and its identification will initiate intense infection control and public health measures.

Background: *Staph aureus* is a common opportunistic pathogen. Many isolates of *Staph aureus* are resistant to the "methicillin" class of drugs, including oxacillin and nafcillin. Some isolates are resistant to quinolones and macrolides as well. For some isolates, vancomycin is the final option for treatment. We have been fortunate that vancomycin-resistance has been slow to develop in *Staph aureus*.

In 2002, the first isolate of VRSA was found in Michigan. Since that time, only two more isolates of VRSA have ever been identified in the United States, and only 8 cases of VISA. In each case, hospitals established intense infection control measures to contain the isolate immediately following the identification. Therefore, timely and accurate identification of VRSA/VISA isolates is necessary to avoid a possible outbreak.

Laboratory identification: Automated methods alone (such as the MicroScan) will NOT reliably detect VRSA isolates. At a minimum, you must add a vancomycin screening plate to all MRSA isolates. Please see the attached testing algorithm to determine the best approach for your laboratory.

Process when VRSA/VISA are identified: Your computer program should flag all *Staphylococcus aureus* isolates with a vancomycin MIC greater than or equal to 2 µg/ml. Your techs should flag any vancomycin plate with growth. In either of these events, the supervisor/lab director should be notified and the algorithm consulted. If the isolate could be VISA or VRSA, the isolate should have a purity check and re-identification, and the susceptibility should be retested using your choice of:

- broth microdilution
- agar dilution
- E-test (agar gradient dilution)

If your laboratory does not have the ability to perform one of these tests, it should be sent immediately to a reference laboratory for confirmation. The isolate should be saved.

Notification: For all presumptive isolates of VRSA or VISA, immediately notify your infection control practitioner, the physician, and the local health department. CDC should be notified immediately upon confirmation (UDOH can assist with notification).

Utah Department of Health
Office of Epidemiology
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